Design of a Wind Farm in Kuwait

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***Abstract*-Kuwait is considering diversifying its energy resources and not solely depending on oil and gas. Wind energy is one of the renewable energies being considered by the Government. By the year of 2030, the Government is planning to generate 120 MW from wind energy, which makes about 6% of the total renewable energy produced. Previous work conducted by former AUM senior students oncluded that the area of the Abraq Al Habari has the highest potential for installing wind farm with wind power density (WPD) of 180 W/m2 at hub height of 10 meters. This finding, however, was based on wind data for one year only (2013). In this project we collected data for three years to see if the wind speeds recorded in 2013 are consistent, year after a year. We will also have looked at best wind farm layout that would yield the maximum energy production at the minimum cost. Important factors such as terrain, and field roughness will be tudied with the help of industry standard software such as WAsP and Windrose. Nevertheless, the cost analysis will be conducted to see how the project is.**